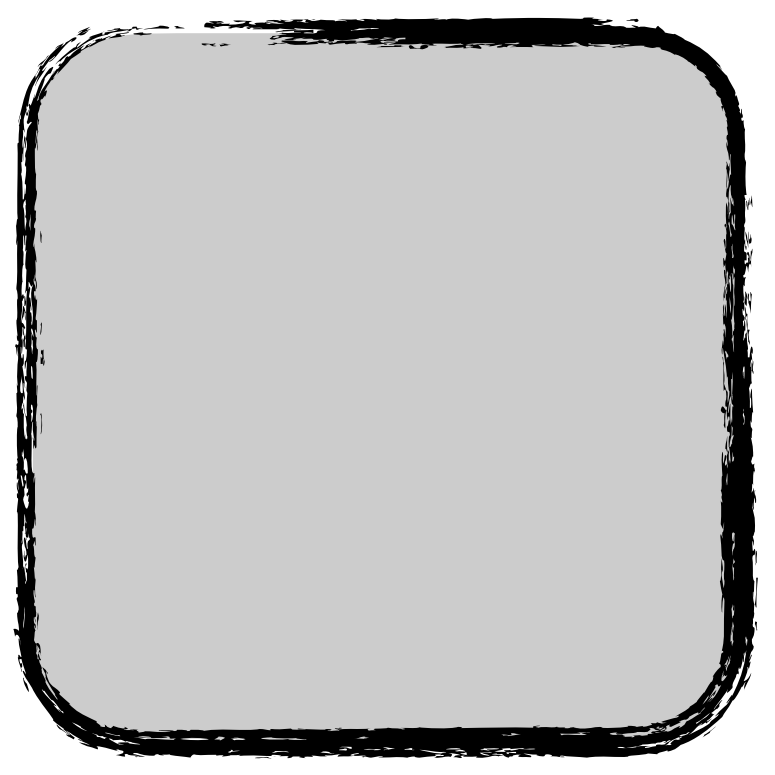
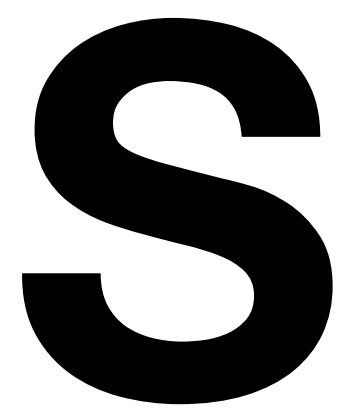
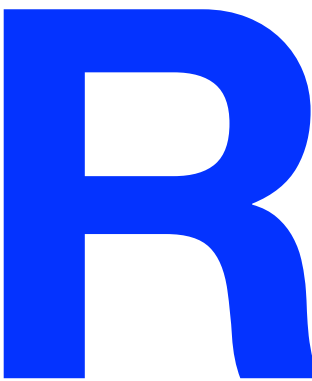
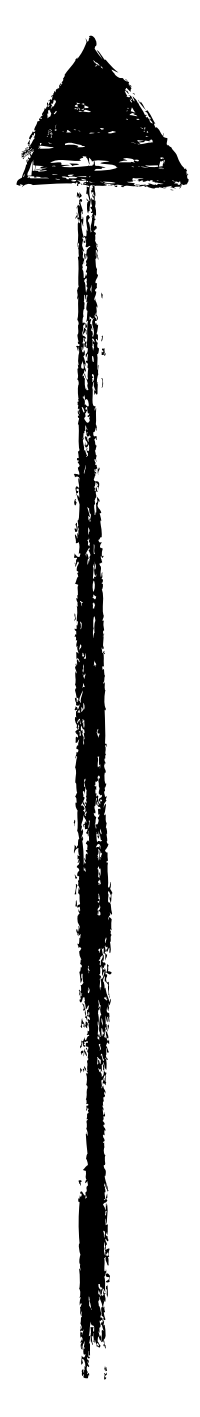
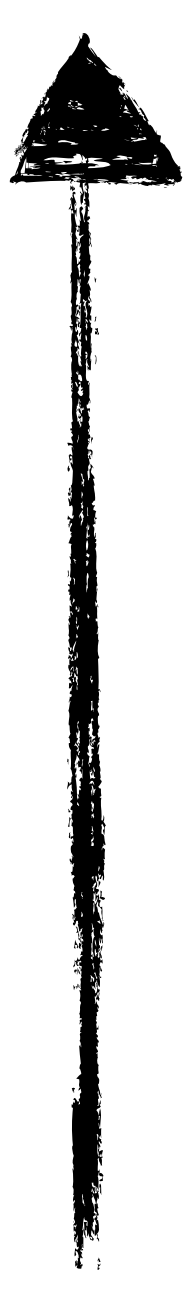


The fundamental model of disease transmission: the SIR model









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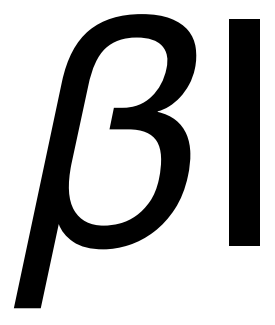
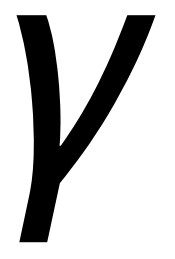
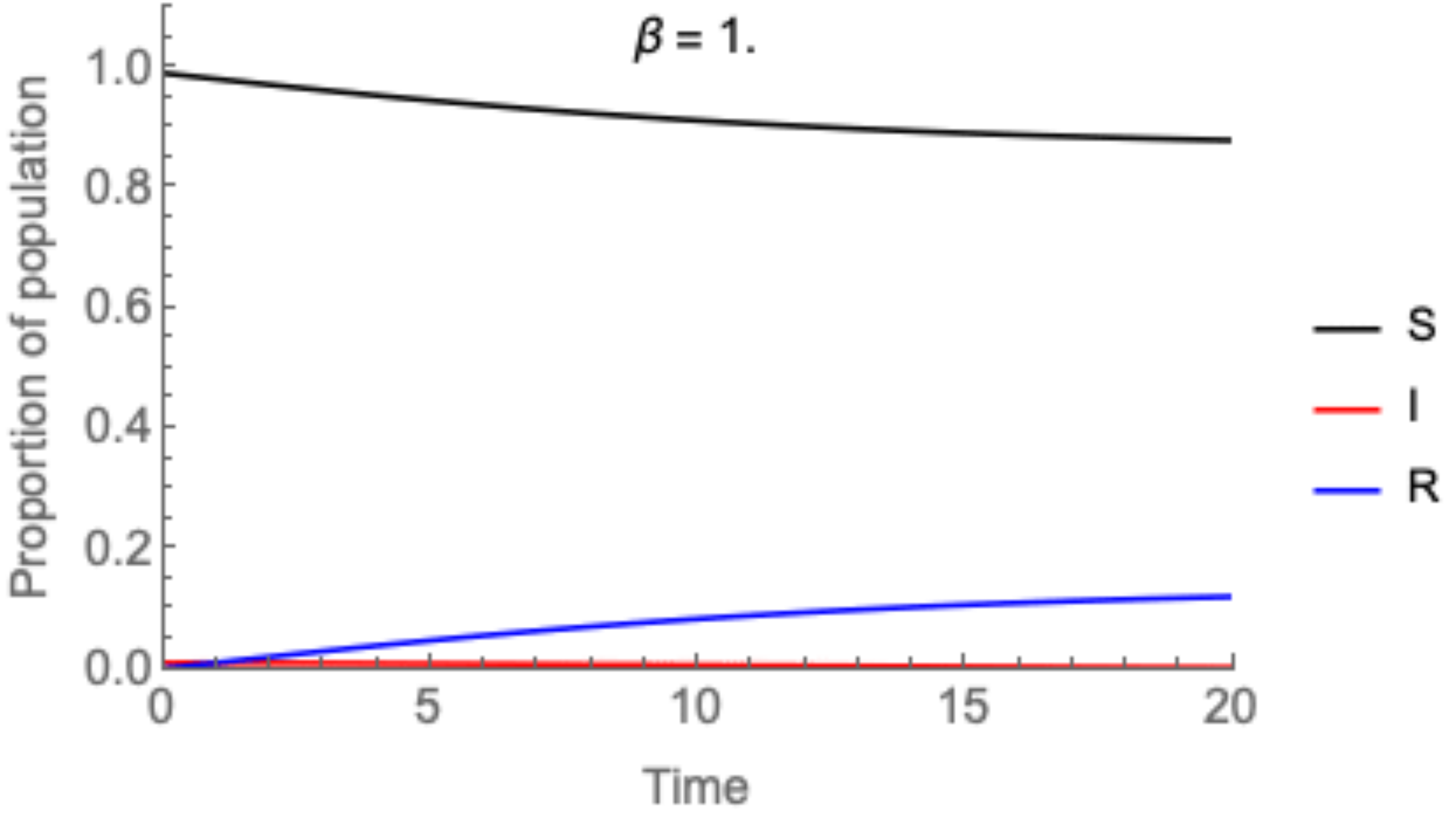
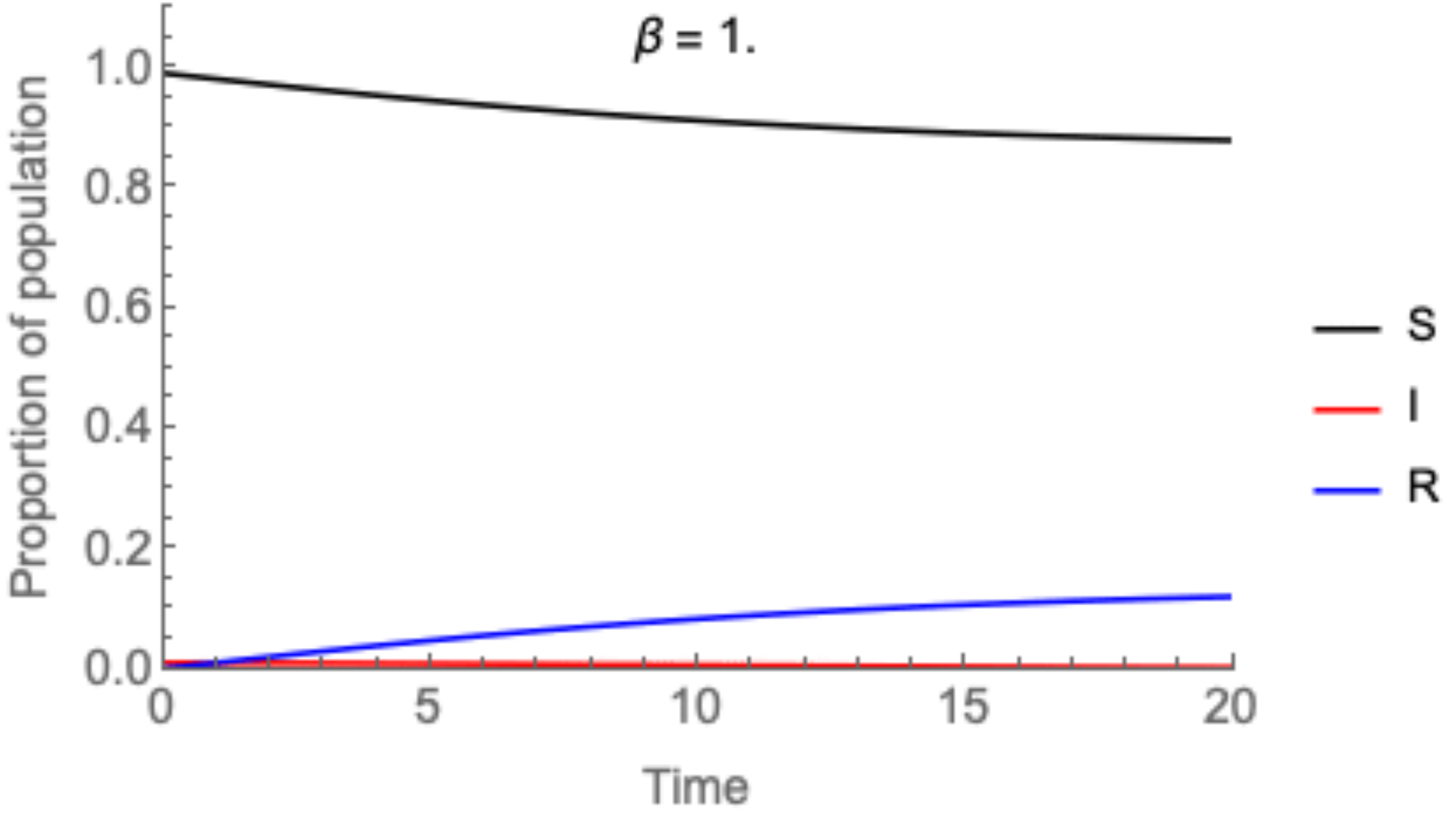





β = 1.
Proportion of population
1.0
0.8
0.6
0.4
0.2
0.0
0
5
10
15
20
Time
S
I
R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The fundamental model of disease transmission: the SIR model

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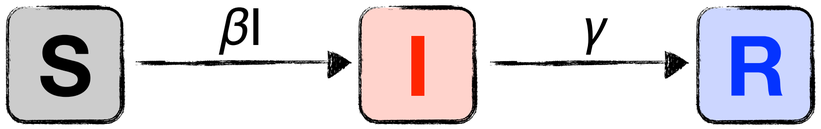
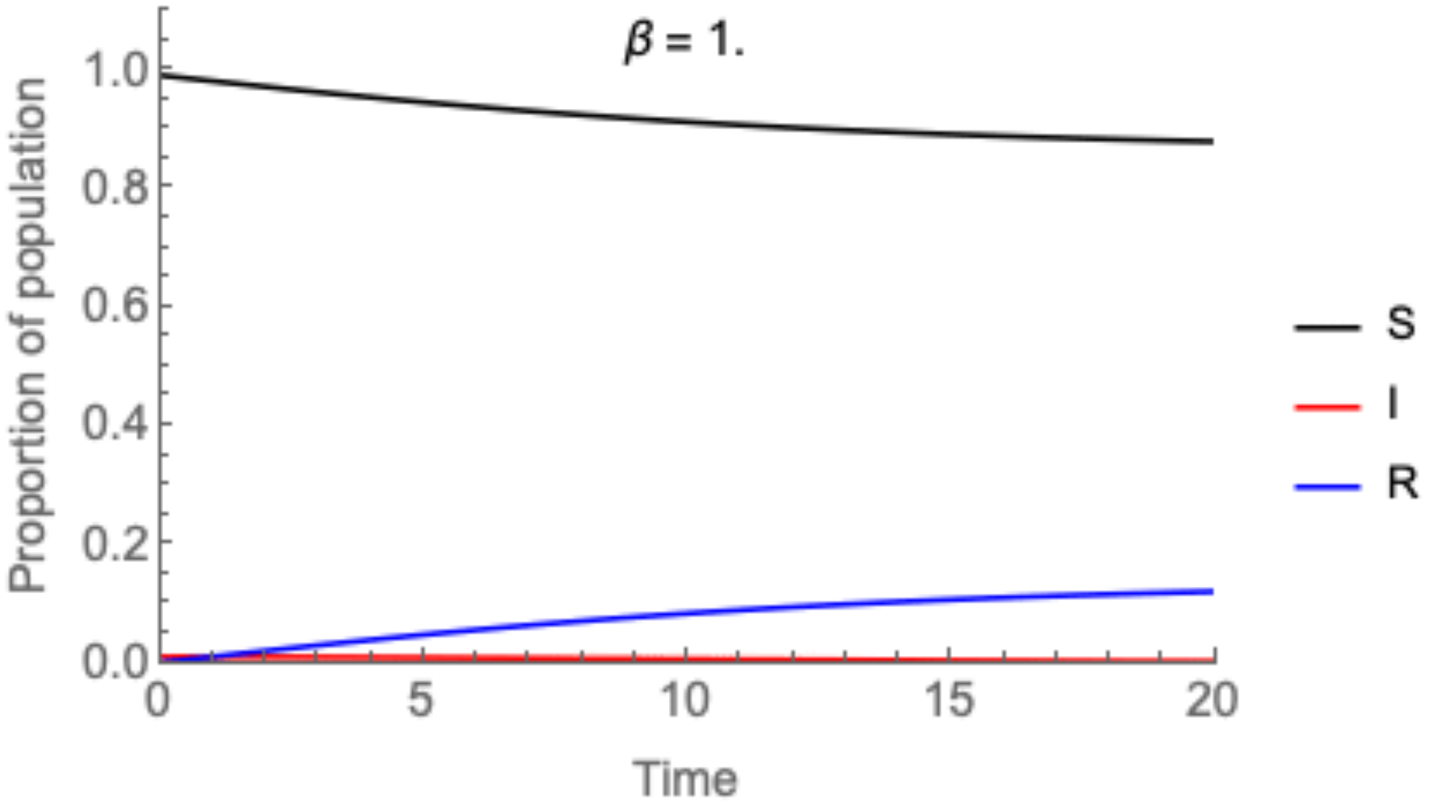
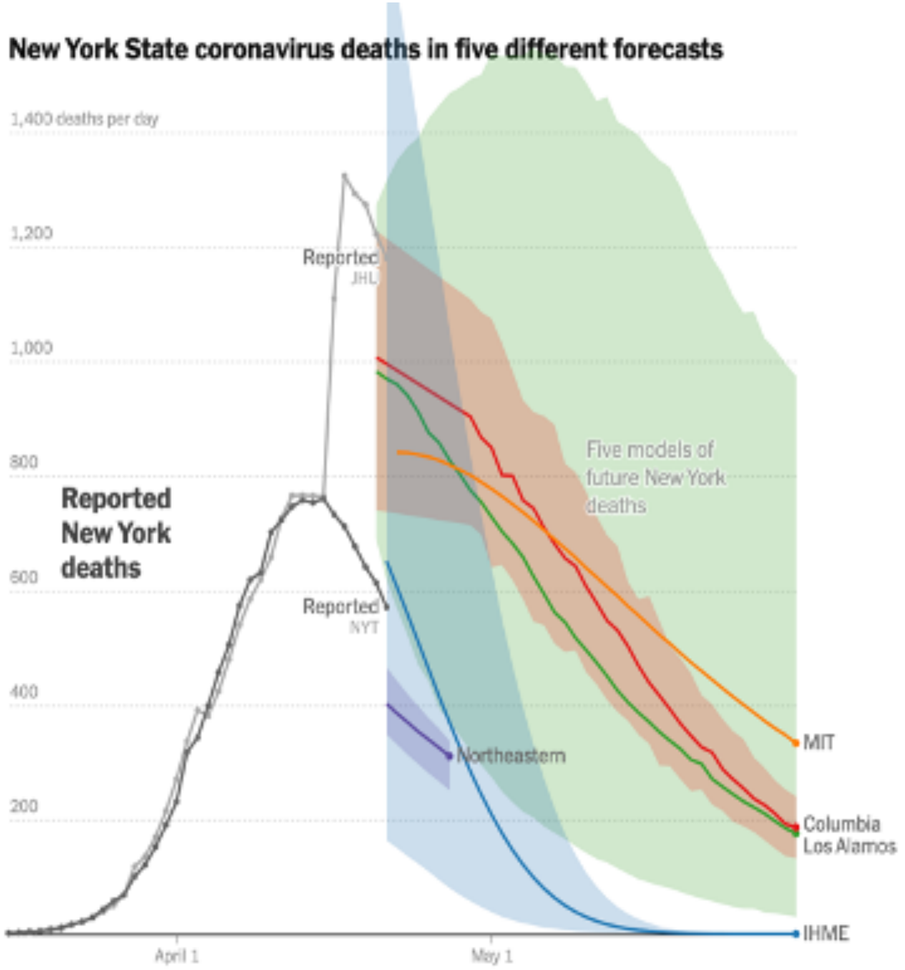




What can we do with the SIR model?

Forecasts

Given where we are now, where will we be in *n* days?



https://www.nytimes.com/interactive/2020/04/22/upshot/coronavirus-models.html

$$\frac{dS}{dt} = -\beta IS$$

$$\frac{dI}{dt} = \beta IS - \gamma I$$

$$\frac{dR}{dt} = \gamma I$$

Just take these equations with plausible values for β and γ, and solve (simulate) them like we did on the previous slides!